



A Thomas Edison Incubator

Summary of Research Report
For the Period July, 1996-September 30, 2000

Lewis Incubator for Technology (LIFT)
NASA Cooperative Agreement NCC 3-484

Wayne P. Zeman
Executive Director
Lewis Incubator for Technology
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Background

This report summarizes the work done to establish and operate the Lewis Incubator for Technology under NASA Grant NCC3-484 for the period July 1996 through September 2000.

The Lewis Incubator for Technology (LIFT), which began accepting tenants in March 1997, is a business incubator designed to nurture new and emerging technology-based businesses. LIFT has strong links with the NASA Glenn Research Center (GRC) and this close affinity provides outstanding resources for technology and support from GRC. In addition to NASA Glenn, LIFT is a cooperative effort of the Ohio Department of Development, the Great Lakes Industrial Technology Center (GLITeC), and managed by Enterprise Development, Inc., an organization with proven expertise in entrepreneurial assistance and development.

LIFT's primary objectives are to increase the value and visibility of NASA knowledge, technology and expertise, and to create technology-oriented businesses and high-value jobs in the State of Ohio. LIFT incubates companies that are engaged in the further development and commercialization of NASA technologies as well as startups with the potential to develop and commercialize NASA technologies. LIFT provides significant benefits to NASA, including:

- New products based on NASA technology;
- New companies based on NASA technology;
- Increased number of NASA technologies that are commercialized;
- Increased community and industry leveraging of NASA resources; and
- Increased community understanding of the value of NASA.

Grant History and Leverage

Enterprise Development, Inc. was originally awarded funding from NASA Lewis Research Center (now NASA Glenn Research Center) to start and operate the Lewis Incubator for Technology under Cooperative Agreement NCC3-484 in the amount of \$1,109,800 for the period July 1, 1996 through June 30, 1999. Through several modifications, this agreement was subsequently extended to September 30, 2000, and additional funding added to make the total amount \$1,510,781. Of that total granted amount, LIFT spent \$1,411,501 during the grant period.

The original grant from NASA was predicated on the startup and operation of a lab-based incubator facility and program, however, based on a request from NASA Glenn and demand for additional non-lab space by area entrepreneurs, LIFT submitted a proposal to open a second incubator site focusing on the needs of software, electronics and communications (SEC) ventures. The proposal was accepted by NASA and LIFT was awarded an additional \$200,000 (included in the funding total noted above) to execute this new program. That site, which opened in May 1999, is located in approximately 5,000 sq. ft. of space in the Development Engineering Annex Building 501 on the grounds of NASA Glenn Research.

Leverage of the NASA funding is provided to the LIFT program from several sources. The Ohio Department of Development granted LIFT \$877,000 for the period from mid-1996 through June 30, 2001. NASA funds were also leveraged by donation of space at less than market rates by BP Amoco (and now by Sherwin-Williams), a cash donation by BP Amoco, and provision of internet wiring upgrades by NASA. The total value of these donations has amounted to approximately \$500,000 since program inception in 1996. In addition to donations, the LIFT program charges its tenants for rents and services. The income from rents and services, which amounted to \$375,000 for the grant period, has been "reinvested" in the LIFT program to provide additional tenant services.

Performance

Since its inception, all critical performance measures for LIFT have been met or exceeded, on or ahead of schedule. As of September 30, 2000 LIFT housed 11 technology-based tenants and has had 3 tenant companies “graduate” from the program. (Complete tenant and graduate statistics are shown in the Client Profile Sheet on page 7) The available space at the lab-based location is filled with a waiting list of potential tenants in place and interest from potential tenants continues to grow for the LIFT SEC site.

Both tenants and graduates work in such diverse technology areas as environmentally-friendly polymers and coatings, computational fluid dynamics, wireless communications, advanced ceramics, and early detection of drug adverse reactions. LIFT and its partners continue to work with several additional potential tenants still in the “pre-incubator” stage to help them advance their business concept to the point where they are ready for incubator tenancy.

LIFT began its operation in March, 1997, after a lease for about 15,000 sq. ft. of space at the BP Research Facility was signed. Since that date, a number of major items were accomplished to allow LIFT become a fully functioning incubator, including:

- a Technology Director and Incubator Coordinator were hired;
- vacant lab space was renovated to provide an administrative area for the incubator;
- shared office equipment was purchased and installed;
- shared computer equipment with T-1 access to the internet was purchased and installed;
- significant marketing efforts such as mailings, speeches, open-houses, tours, individual meetings, and print and electronic promotion were undertaken to acquaint potential tenants with LIFT features and benefits;
- a pre-incubator and tenant counseling program were established in conjunction with EDI and GLITeC; and
- a technology assessment program was established, in conjunction with GLITeC and NASA Glenn to assist NASA in its technology commercialization efforts.

In addition to meeting its Key Performance Measures and opening the SEC site, some of the other major accomplishments of the Lewis Incubator for Technology since inception are:

- LIFT organized a team of three CWRU students for the 1999-2000 academic year to evaluate eleven NASA technologies, select one with strong commercial potential and write a business plan defining its commercialization. Based on the success of that team, the program was continued with a new team of students for the 2000-01 academic year.
- LIFT developed a Technology Transfer Tactics seminar series in conjunction with EDI's Entrepreneurial Education staff. Three sessions, each using panel discussion/question and answer format, were held to discuss mechanics of tech transfer, tech transfer from an

institutional perspective and tech transfer from a corporate perspective. Attendance greatly exceeded expectations with approximately 70 individuals representing 40 companies attending each of the three sessions.

- As a result of the Technology Transfer Tactics seminar series, representatives of Case Western Reserve University approached LIFT and EDI staff requesting the development and execution of a technology transfer program for the University. This program is designed to foster the transfer and commercialization of university developed technology and was held in early 1999.
- Since program inception, LIFT has also developed (and strengthened relationships already in place through the Enterprise Development network) links with a wide variety of organizations such as the state-wide Edison Centers, other NASA-funded incubators, other Edison Incubators (especially through the Edison Technology Incubators Directors Council), universities (especially CWRU), the Northeast Ohio Software Association, Cleveland Tomorrow/NorTech. These links, along with new ones, will continue to be developed and fostered.

On-Going Activities

LIFT located its lab based incubator in the former BP America Research Facility in Warrensville Heights, Ohio. This facility was sold to Sherwin-Williams and Sherwin-Williams notified LIFT that it must move. An extensive search for similar high-quality lab and office space was conducted, space at the ICI Paint Research Center in Strongsville, approximately 10 minutes from the Glenn Research Center, was identified, and a lease for approximately 14,000 sq. ft. of space was signed. ICI projects that they will release several thousand square feet of additional lab and office space to LIFT as ICI continues to consolidate their operations. This will allow LIFT to move its tenants and program intact to ICI by March 1, 2001 and provide expansion space for additional tenants in the future. The SEC site will remain at NASA Glenn.

LIFT continues its operations and the program continues to generate strong interest. All currently available space at the lab-based facility at the ICI facility will be used and a waiting list of tenants requesting space is in place. Interest in the SEC site also continues strong with a continuing flow of potential tenant candidates. NASA has awarded a new cooperative agreement grant to Enterprise Development, Inc. for the continued operation of LIFT through September 30, 2003 in the amount of \$1.295 million. The State of Ohio has also indicated in writing that they intend to continue to fund the Lewis Incubator for Technology for the next biennial period that will run through June 2003.

Metrics

KEY PERFORMANCE MEASUREMENTS

Lewis Incubator for Technology (Warrensville and SEC Sites)

June 30, 1996 through September 30, 2000

TABLE 1

Client Data Statistics—Warrensville Site

Since
Inception

Number of tenants (as of the end of the reporting quarter)	8
Number of graduates	1
Total number of jobs created by current tenants	24
Total number of jobs created by graduate companies	5
New tenant - jobs in existence upon entry	21
Average months of residency of current tenants	22

Client Data Statistics—NASA SEC Site

Since
Inception

Number of tenants (as of the end of the reporting quarter)	3
Number of graduates	2
Total number of jobs created by current tenants	15
Total number of jobs created by graduate companies	0
New tenant - jobs in existence upon entry	19
Average months of residency of current tenants	9

TABLE 2

Business Assistance—Both Sites*

Since
Inception

Number of incubator educational services*	64
Number of attendees (tenants & others)	1,183
Number of potential tenants assisted	128

*Some programs held in conjunction with the Edison Technology Incubator and BioEnterprise.

NAME OF THE INCUBATOR

LIFT

Lewis Incubator for Technology
Client Profile in Order of Entry Date
As of 9/30/00

Company Name	Business Type** L / S	Market Stage** pre / post	Technology Oriented Y / N	Female/ Minority	Current Status**	Entry Date--	Exit Date	Number of Months in Incubator	Number of Years Graduated	Employment Figures-- At Entry Current	Space Initial	Occupied Current	(--Money Sales Initial ¹	Data in Current ²	000's-- Payroll Current ³
Graduates															
Analiza, Inc.	S	Post	Y	N	0	Apr-97	Jul-00	37	3 Months	4	1,157	3,500	-	-	-
Arbore Technology, Inc.	S	Post	Y	N	0	Feb-00	Aug-00	6.5	1 Month	3	270	N/A	-	-	-
NovaTek Engineering, Inc.	S	Pre	Y	N	0	Mar-00	Aug-00	5	1 Month	3	270	N/A	-	-	-
Subtotals:								48.5		10	1,697	3,500	na	na	na
Tenants															
Warrensburg Site															
SPECMAT	S	Pre	Y	Y	0	Feb-00		8		2	1,152	1,152	-	-	-
Bi-K Corporation	S	Pre	Y	Y	0	Aug-99		14		1	1,028	1,028	-	-	-
ChanTest, Inc.	S	Post	Y	Y	0	Jun-99		16		4	1,153	2,318	-	-	-
Wave Shield	S	Pre	Y	Y	0	Apr-99		18		1	135	135	-	-	-
Kamlee, Inc.	S	Pre	Y	Y	0	Oct-98		24		2	881	881	-	-	-
Prevention Research Lab (PRL)	S	Pre	Y	N	0	May-98		28		1	1,126	1,126	-	-	-
Cerone, Inc.	S	Pre	Y	Y	0	Apr-98		29		2	1,019	1,164	-	-	-
The Edgington Co.(TEC)	S	Pre	Y	N	0	Aug-97		36		4	1,209	1,344	-	-	-
Warr. Subtotals								173		17	7,703	9,148			
SEC Site															
e-emerging technology group	S	Pre	Y	N	0	Jun-00		4		10	270	270			
CyStorm, Inc.	S	Pre	Y	Y	0	Feb-00		7.5		2	270	270			
AP Solutions	S	Pre	Y	Y	0	May-99		16.5		1	270	270			
SEC Subtotals								28		13	810	810			
Non-client service providers															
None															
GRAND TOTAL								201		30	8,513	9,958	\$52,337	\$774,115	\$374,351

**Current Status Code

O = Operating
1 = FAILED (Zero Numbers)
2 = Merged (Freeze Numbers)
3 = Bought (Freeze Numbers)
4 = Unknown (Zero Numbers after three years)

**Market Stage Code

Pre = Pre-Market stage
Post = Post-Market stage
NA = Not Applicable
NOTE: If company is non-tech then use NA for Market Stage category.

**Business Type Code

L = Lifestyle business type
S = Scalable business type
NA = Not Applicable
NOTE: If company is non-tech then use NA for Business Type category.

Key

--Most recent first

---May include contract employees

¹ Aggregate Net Sales/Total Revenues, including grants/contracts, reported from 1998 Tenant and Graduate Survey used in reporting initial sales (4 tenants reporting).² Aggregate Total Revenues, including grants/contracts, reported from 1998 Tenant and Graduate Survey used in reporting current sales (4 tenants reporting).³ Aggregate Payroll figure reported from 1998 Tenant and Graduate Survey (4 tenants reporting).

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